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STABLE TOPICAL COMPOSITION CONTAINING A SOLID ELASTOMERIC  
ORGANOPOLYSILOXANE AND SPHERICAL PARTICLES

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The invention refers to a stable topical composition usable in the cosmetic or dermatological fields containing at least one liquid fatty phase combined with a solid phase

representing at least 10% of the total weight of the fatty phase and consisting of a partially or totally crosslinked elastomeric organopolysiloxane and polymeric spherical particles with a particle diameter less than 10  $\mu\text{m}$ .

#### Description

[0001]

The invention refers to a stable topical composition containing a liquid fatty phase combined with a partially or totally crosslinked elastomeric organopolysiloxane. This composition is more specifically intended for the dermatological or cosmetic field. It may especially form a composition for skincare, treatment, makeup or makeup removal from the skin of the face or the body, keratin fibers (hair, eyelashes, eyebrows) and mucosas such as the lips and the internal surfaces of the eyelids of human beings.

[0002]

Spherical particles such as particles of silica are known to be used in cosmetic or dermatological compositions with a view to conferring a certain consistency to these compositions. Reference may particularly be made to the document from Shiseido, EP-A-765,656. In these compositions, the higher the amount of particles, the thicker the composition. In addition, these particles have the property of absorbing fats conferring a nongreasy appearance to these compositions, even in the presence of a large amount of fat. This type of composition is clearly appreciated by consumers and especially by persons who tend to have greasy skin. Unfortunately, the higher the amount of silica particles, the more unstable the composition. In addition, the particles make the composition very rough and dry to the touch, thus limiting the use of this type of composition.

[0003]

The applicant has just perfected a stable composition with high levels of spherical particles that does not present the above drawbacks, even while keeping the nongreasy property.

[0004]

More precisely, the invention refers to a composition containing at least one liquid fatty phase combined with a solid phase consisting of particles of at least one partially or totally crosslinked elastomeric organopolysiloxane characterized in that the solid phase represents at least 10% of the total weight of the fatty phase and in addition contains organic spherical particles with a particle diameter less than 10  $\mu\text{m}$ .

[0005]

The invention also has as a goal the use in a composition containing at least one liquid fatty phase and one solid phase representing at least 10% of the total weight of the fatty phase and containing organic spherical particles with a particle diameter less than 10  $\mu\text{m}$ , with particles from one or several partially or totally crosslinked organopolysiloxanes combined with said fatty phase, to stabilize and/or make said composition homogeneous.

[0006]

It even has as a goal a procedure for the stabilization and/or homogenization of a composition containing at least one liquid fatty phase and a solid phase representing at least 10% of the total weight of the fatty phase and containing spherical particles with a particle diameter less than 10  $\mu\text{m}$  consisting of the combining of at least one partially or totally crosslinked elastomeric organopolysiloxane with said fatty phase particles.

[0007]

Due to the presence of one or several elastomeric solid organopolysiloxanes it is possible to obtain stable compositions containing a high amount of organic spherical particles that can represent up to 40 wt% (as active material) of the total fatty phase.

[0008]

"Stable composition" is understood to refer to keeping the homogeneous appearance of the composition without demixing, precipitation or flocculation of the particles for at least 2 months at 45°C.

[0009]

"Elastomeric" is understood to be a flexible, deformable material with viscoelastic properties and especially presenting the consistency of a sponge or flexible sphere.

[0010]

"Liquid fatty phase" is understood to be a liquid fatty phase at room temperature, often called an oily phase.

[0011]

According to the invention it is possible in addition to combine a fatty phase that is solid or semisolid at room temperature with the liquid fatty phase with a view to modifying the rheology of the composition.

[0012]

Although the invention applies to any technical field, it is intended more specifically for the cosmetic and dermatological field. The composition of the invention is well adapted to topical application.

[0013]

The elastomeric organopolysiloxanes of the composition according to the invention have a remarkable oil gelling ability. They are not drying on the skin and have good cosmetic properties. These new elastomers result in compositions that are comfortable upon application; they are soft and not sticky to the touch. This softness is especially due to the texture of the organopolysiloxanes.

[0014]

The combination of the invention also allows skincare or makeup products to be obtained that are especially intended to smooth out imperfections in the relief of the skin while giving it a natural appearance.

[0015]

Preferably, the organic spherical particles have a particle diameter less than 5  $\mu\text{m}$ . The particle diameter is understood to be that of elementary particles. In fact, spherical particles may have the tendency to agglomerate, leading to aggregates that may have particle diameters greater than 5  $\mu\text{m}$ , even greater than 10  $\mu\text{m}$ .

[0016]

In particular, the organic spherical particles to which the invention applies are polymeric particles chosen from the methylsilsesquioxane resin microspheres such as for example those sold by Toshiba Silicone under the name Tospearl 145A, microspheres of polymethylmethacrylates such as especially those sold by Seppic under the name Micropearl M 100, the spherical particles of crosslinked polydimethylsiloxanes, especially such as those sold by Dow Corning Toray Silicone under the name Trefil E 506C or Trefil E-505C, spherical particles of polyamide and more specifically Nylon 12, especially such as those sold by Atochem under the name Orgasol 2002 D Nat C05, polystyrene microspheres such as for example those sold by Dyno Particles under the name Dynospheres, and their mixtures.

[0017]

The "Trefils" are in particular spherical particles of crosslinked polymers described in the application EP-A-0295886 from Toray Silicone Company. According to this application, they are obtained by the addition and crosslinking reaction in the presence of a platinum-type catalyst, from at least:

- (a) an organopolysiloxane with at least two lower alkenyl groups per molecule; and
- (b) an organopolysiloxane with at least two hydrogen atoms bonded to a silicon atom per molecule.

[0018]

The elastomeric organopolysiloxanes of the composition of the invention have a three-dimensional structure. According to the levels of the liquid fatty phase combined with these organopolysiloxanes, these latter are transformed from a product with a spongy appearance when they are used in the presence of small contents of a fatty phase into a more or less homogeneous gel in the presence of higher amounts of a fatty phase. Gelling of the liquid fatty phase by these elastomers may be total or partial.

[0019]

The elastomers of the composition of the invention are generally conveyed in the form of a gel formed from an elastomeric organopolysiloxane with a three-dimensional structure, included in at least one hydrocarbon oil and/or silicone oil.

[0020]

The elastomeric organopolysiloxanes of the composition according to the invention may also be chosen from those described in the patent US 5 266 321 of Kobayashi Kose. According to this patent, they are especially chosen from:

- i) organopolysiloxanes containing  $R_2SiO$  and  $RSiO_{1.5}$  units and possibly  $R_3SiO_{0.5}$  units and/or  $SiO_2$  in which independently of each other the R radicals represent hydrogens, alkyls such as methyl, ethyl or propyl, aryls such as phenyl or tolyl, unsaturated aliphatic groups such as vinyl, the weight ratio of the  $R_2SiO$  units to the  $RSiO_{1.5}$  ranging from 1/1 to 30/1;
- ii) organopolysiloxanes that are insoluble and can swell in a silicone oil, obtained by addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) with unsaturated aliphatic groups such that the amount of hydrogen or unsaturated aliphatic groups in (1) and (2) respectively is between 1 and 20 mol% when the organopolysiloxane is acyclic and between 1 and 50% when the organopolysiloxane is cyclic.

[0021]

The organopolysiloxanes that are the object of the inventions are for example those marketed under the names KSG6 from Shin-Etsu, Gransil from Grant Industries (SR-CYC, SR DMF10, SR-DC556) or those marketed in the form of already formed gels (KSG 15, KSG 17, KSG 16, KSG 18 from Shin-Etsu, Gransil SR 5CYC gel, Gransil SR DMF 10 gel, Gransil SR DC 556 gel, SF 1204 and JK 113 from General Electric). A mixture of these commercial products may also be used.

[0022]

All of the elastomeric organopolysiloxane particles and spherical particles represent at least 10% (as active material) of the total weight of the fatty phase (liquid + solid), more preferably at least 20% (as active material). In addition, all of this may represent up to 40% (as active material) of the total weight of the fatty phase.

[0023]

The stability and homogeneity of the composition depend on the amount of spherical particles and increases with the amount of elastomeric organopolysiloxane. As an indication, the weight ratio of spherical particles and particles of organopolysiloxane particles (as active material) is chosen in the range of 0.25 to 1, more preferably 0.4 to 0.7. As a preference, the amount of spherical particles (as active material) varies from 2% to 20% of the total weight of the composition and the amount of elastomeric organopolysiloxane particles (as active material) varies from 2% to 20% of the total weight of the composition.

[0024]

Advantageously, the composition consists of a continuous fatty phase. Because of specific particles present in the invention, this type of composition is neither greasy nor oily to the touch or upon application. In addition, this composition is very soft. Thus, the composition of the invention may be advantageously an anhydrous gel or a water-in-oil emulsion (W/O). However, it may be presented in the form of an oil-in-water emulsion. In addition, it is presented in the form of a cream.

[0025]

According to the amount of particles used, it is possible to obtain compositions that are more or less viscous and stable and homogeneous over time. In particular, the composition may have a dynamic viscosity of 2 to 20 Pa·s that is measured at room temperature with an apparatus of the Rheomat RM 180 type (Mettler).

[0026]

Advantageously, the composition of the invention forms a base for skincare or makeup, to be applied on the skin or lips before the skincare or makeup product. It especially allows the appearance of the skincare or makeup composition to be prolonged over time, which is particularly worthwhile for products for makeup foundation, for hiding dark shadows under the eyes, lip shine (gloss in English terminology) and the sun-protection products. It may also be used as a matting composition for the skin, adapted to greasy skin.

[0027]

The oily fatty phase combined with elastomeric organopolysiloxanes of the invention may contain hydrocarbon oils and/or silicone oils.

[0028]

As hydrocarbon oils usable in the invention, the following may be especially mentioned:

- hydrocarbon oils of animal origin such as perhydrosqualane;
- hydrocarbon oils of plant origin such as the liquid triglycerides of fatty acids with 4 to 10 carbon atoms such as the triglycerides of heptanoic or octanoic acids, or even sunflower oil, corn oil, soybean oil, hazel nut oil, apricot oil, macadamia oil, castor oil, avocado oil, triglycerides of caprylic/capric acids such as sold by the Stearineries Dubois company or those sold under the trade names Miglyol 810, 812 and 818 by the Dynamit Nobel company, jojoba oil, shea butter;
- straight-chain or branched hydrocarbons of mineral or synthetic origin such as the paraffin oils and their derivatives, hydrogenated isoparaffins that may or may not be volatile, vaseline, polydecenes, Purcellin oil, hydrogenated polyisobutene such as parleam;
- synthetic esters and ethers such as oils with the formula  $R_1COOR_2$  in which  $R_1$  represents the residue of a higher fatty acid containing 6 to 29 carbon atoms and  $R_2$  represents a hydrocarbon chain containing 3 to 30 carbon atoms such as Purcellin oil, isopropyl myristate, 2-ethylhexyl palmitate, 2-octyldodecyl stearate, isostearyl isostearate, arachidyl propionate, 2-octyldodecyl benzoate; hydroxylated esters such as isostearyl lactate, octyl hydroxystearate, octyldodecyl hydroxystearate, diisostearyl malate, triisocetyl citrate; polyol esters such as propylene glycol dioctanoate, neopentyl glycol diheptanoate, diethylene glycol diisononanoate and the esters of pentaerythritol;
- fatty alcohols with 12 to 26 carbon atoms such as octyl dodecanol, 2-butyloctanol,
- 2-hexyldecanol, 2-undecylpentadecanol, oleyl alcohol, cetyl alcohol;
- their mixtures.



[0029]

The silicone oils usable in the invention are especially the polymethylsiloxanes with a linear or cyclic structure, liquid or pasty at room temperature, for example polydimethylsiloxanes such as hexamethyldisiloxane, octamethylcyclopentasiloxane, decamethylcyclopentasiloxane, phenyl dimethicones, phenyl trimethicones and polymethylphenylsiloxanes, and their mixtures.

[0030]

The solid or semisolid fatty phase possibly present in the composition contains in particular waxes and/or gums. The waxes and gums usable in the invention are especially the microcrystalline waxes and silicone gums.

[0031]

The total fatty phase may represent 5 to 90% of the total weight of the finished product, more preferably to 80%.

[0032]

The composition of the invention advantageously contains coloring materials and especially a particular phase generally present at the ratio of 0.05 (even 0%) to 35% of the total weight of the composition, preferably 2 to 25%, and which may comprise pigments and/or pearlescent agents usually used in cosmetic products. This phase may result in a colored, white or colorless product. As a pigment usable in the composition of the invention, the following may be mentioned: the oxides of titanium, zirconium, or cerium as well as the oxides of zinc, iron or chromium, ferric blue, carbon black, and lakes of barium, strontium, calcium, aluminum.

[0033]

The composition according to the invention may include in addition the ingredients usually used in cosmetics chosen according to the activity of cosmetic effect desired for the final product, such as covering, transparency, matting and/or satiny appearance. The following may be mentioned without limiting effects:

- lipophilic or hydrophilic thickeners such as modified clays known under the names of bentone; fatty salts of aluminum; carboxymethylcellulose; polyacrylamides;
- vitamins such as tocopherols and their derivatives including acetate, vitamin A and its derivatives, vitamin C and its derivatives such as fatty esters including palmitate;
- sunscreens such as octylmethoxycinnamate (Parsol MCX), 3-benzophenone (Uvinul M40), butylmethoxydibenzoylmethane (Parsol 1789);
- lecithin, fragrances, essential oils, ceramides, preservatives, antioxidants;

- moisturizing agents, such as propylene glycol, glycerol or even ethanol;
- agents acting on greasy skin and/or antiseborrheic agents such as copper and/or zinc salts.

[0034]

The composition may also include a surfactant, for example an ordinary anionic or nonionic surfactant. The surfactant is preferably present at a ratio of 0.3 (even 0% in an anhydrous composition) to 8% of the total weight of the composition. As a surfactant usable in the composition of the invention, the following may be mentioned: polysorbate 40, glycerol monostearate, dimethicone polyols with oxypropylenated and/or oxyethylenated chains.

[0035]

The production procedures of the compositions according to the invention do not differ from any of the procedures usually used in cosmetics and are perfectly known to the specialist in the field.

[0036]

In the examples below, the amount of the ingredients is given in percentage by weight.

Example 1: Anhydrous sun care\*

[0037]

. Phase 1a :		
	Tospearl 145 A	6

  

. Phase 2a :		
①	Gransil SR 5 CYC (à 25 % de siloxane réticulé)	40,0

  

. Phase grasse liquide :		
②	Cyclométhicone	44,0
③	Octyl Méthoxycinnamate	5,0
	Perhydrosqualène végétal	5,0
	Parfum	qs

\* [Editor's note: in the original document, commas in numbers represented decimals.]

Key:	1	Gransil SR 5 CYC (with 25% crosslinked siloxane)
	2	Liquid fatty phase
	3	Cyclomethicone
		Octyl methoxycinnamate
		Plant perhydrosqualene
		Fragrance

[0038]

This composition is obtained by dispersing at room temperature and by stirring phase 1a in the liquid phase and then adding phase 2a, while still stirring. This composition has the appearance of a translucent gel that is not greasy and is soft. It has stability for 2 months at 45°C.

Example 2: W/O makeup foundation

[0039]

. Phase 1b :	
Micropearl M 100	5

. Phase 2b :	
KSG 16 (à 24 % de siloxane réticulé)	25,0

. Phase grasse liquide :	
Diméthicone Copolyol	0,5
Cyclométhicone	4,5
Octyl Méthoxycinnamate	2,0
PDMS liquide	30,0
Isoparaffine hydrogénée	5,0
Parfum	qs

. Phase colorante :	
TiO <sub>2</sub>	4,0
Oxydes de fer	0,8

. Phase aqueuse :	
Glycérine	10,0
Eau déminéralisée	15,0
Conservateurs	qs

Key:	1	KSG 16 (with 24% crosslinked siloxane)
	2	Liquid fatty phase:
	3	Dimethicone copolyol
		Cyclomethicone
		Octyl methoxycinnamate
		Liquid PDMS
		Hydrogenated isoparaffin
		Fragrance
	4	Coloring phase
	5	Iron oxides
	6	Aqueous phase
	7	Glycerin
		Demineralized water
		Preservatives

[0040]

This composition is obtained by dispersing 1b then 2b successively and by stirring the coloring phases in the liquid phase at room temperature. Next, the aqueous phase is emulsified in the fatty phase in a mixer at room temperature. This composition has the appearance of a tinted cream that is not greasy and is soft. It has stability for 2 months at 45°C.

## Example 3: O/W skincare cream

[0041]

①

. Phase 1c :	
Tréfil E 506C (100% matière active)	2

②

. Phase 2c :	
Gransil SR 5 CYC (à 25 % de siloxane réticulé)	8,0

③

④

. Phase grasse liquide :	
Polysorbate 40	2,0
Monostéarate de glycérol	2,0
Alcool cétylique	1,0
Cyclométhicone	2,0
Diméthicone	2,0
Huile d'avocat	2,0
Huile de soja	3,0
Anti-oxydant (vitamine E)	0,1

⑤

⑥

. Phase aqueuse :	
Glycérine	5,0
Polyacrylamide (gélifiant hydrophile)	0,7
Carboxyméthylcellulose	0,5
Eau déminéralisée	qsp 100
Conservateur et parfum	qs

- Key:
- 1 Trefil E 506 C (100% active material)
  - 2 Gransil SR 5 CYC (with 25% crosslinked siloxane)
  - 3 Liquid fatty phase:
  - 4 Polysorbate 40
  - Glycerol monostearate
  - Cetyl alcohol
  - Cyclomethicone
  - Dimethicone
  - Avocado oil
  - Soybean oil
  - Antioxidant (vitamin E)
  - 5 Aqueous phase
  - 6 Glycerin
  - Polyacrylamide (hydrophilic gelling)
  - Carboxymethylcellulose
  - Demineralized water
  - Preservative and fragrance

[0042]

One begins by emulsifying the aqueous phase in the fatty phase in a mixer at 65°C. At 50°C phases 1c then 2c are added successively into the emulsion while stirring in a mixer. It is left to cool. This composition has the appearance of a white cream that is not greasy and is soft. It has stability for 2 months at 45°C.

Example 4: Test for use of a makeup base

[0043]

This composition is identical to the makeup foundation in Example 2 without the coloring phase.

①	Personnes du test	80 femmes, utilisatrices de fond de teint	②
③	Durée du test	1 semaine	④

Key: 1      Persons in the test  
 2      80 women, users of makeup foundation  
 3      Time period of the test  
 4      1 week

[0044]

The makeup base is applied before the makeup foundation and the comparison is made with and without the makeup base.

[0045]

The results are the following:

	① Sans Base (tout à fait d'accord)	② Avec Base (tout à fait d'accord)
③ La peau est mate	76 %	94 %
La peau est douce	49 %	88 %
La peau est lisse	40 %	80 %
Le maquillage tient la journée	74 %	95 %

Key: 1      Without base (entirely in agreement)  
 2      With base (entirely in agreement)  
 3      The skin is matte  
       The skin is soft  
       The skin is smooth  
       The makeup lasts all day

[0046]

With this test it is clearly evident that the composition of the invention confers upon the makeup improved properties of appearance over time as well as improved comfort and softness.

### Claims

1. Composition containing at least one liquid fatty phase combined with a solid phase consisting of particles of at least one partially or totally crosslinked elastomeric organopolysiloxane characterized in that the solid phase represents at least 10% of the total weight of the fatty phase and contains in addition organic spherical particles with a particle diameter less than 10  $\mu\text{m}$ .

2. Composition according to Claim 1 characterized in that the organopolysiloxane is obtained by the addition and crosslinking reaction in the presence of a platinum-type catalyst:  
(a) of at least one organopolysiloxane with at least two lower alkenyl groups per molecule; and  
(b) of at least one organopolysiloxane with at least two hydrogen atoms bonded to a silicon atom per molecule.

3. Composition according to Claim 1 or 2 characterized in that the organopolysiloxane is chosen from:

- i) organopolysiloxanes containing  $\text{R}_2\text{SiO}$  and  $\text{RSiO}_{1.5}$  units and possibly  $\text{R}_3\text{SiO}_{0.5}$  units and/or  $\text{SiO}_2$  in which independently of each other the R radicals represent hydrogens, alkyls such as methyl, ethyl or propyl, aryls such as phenyl or tolyl, unsaturated aliphatic groups such as vinyl, the weight ratio of the  $\text{R}_2\text{SiO}$  units to the  $\text{RSiO}_{1.5}$  ranging from 1/1 to 30/1;
- ii) organopolysiloxanes that are insoluble in and can swell in a silicone oil, obtained by the addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) with unsaturated aliphatic groups such that the amount of hydrogen or unsaturated aliphatic groups in (1) and (2) respectively is between 1 mol% and 20 mol% when the organopolysiloxane is acyclic and between 1 and 50% when the organopolysiloxane is cyclic.

4. Composition according to one of the preceding claims characterized in that the spherical particles have a particle diameter less than 5  $\mu\text{m}$ .

5. Composition according to one of the preceding claims characterized in that the spherical particles are chosen from resin microspheres, microspheres of methyl polymethylmethacrylates, spherical particles of crosslinked polydimethylsiloxanes, spherical particles of polyamide, microspheres of polystyrene, and their mixtures.

6. Composition according to one of the preceding claims characterized in that the spherical particles are chosen from polymeric organic particles.

7. Composition according to one of the preceding claims characterized in that the solid phase represents at least 20% of the total weight of the fatty phase.

8. Composition according to one of the preceding claims characterized in that the weight ratio of the spherical particles and the particles of elastomeric organopolysiloxane is chosen in the range of 0.25-1.

9. Composition according to one of the preceding claims characterized in that the weight ratio of the spherical particles and particles of elastomeric organopolysiloxane is chosen in the range of 0.4-0.7.

10. Composition according to one of the preceding claims characterized in that the liquid fatty phase contains at least one silicone oil and/or at least one hydrocarbon oil.

11. Composition according to one of the preceding claims characterized in that the liquid fatty phase contains at least one oil chosen from the hydrocarbon oils of animal, plant, mineral or synthetic origin, fatty alcohols, polymethylsiloxanes.

12. Composition according to one of the preceding claims characterized in that the composition contains in addition a solid or semisolid fatty phase.

13. Composition according to one of the preceding claims characterized in that the composition is presented in the form of an anhydrous gel or a water-in-oil or oil-in-water emulsion.

14. Composition according to one of the preceding claims characterized in that the composition contains a continuous fatty phase.

15. Composition according to one of the preceding claims characterized in that it is presented in the form of a cosmetic or dermatological composition.

16. Composition according to one of the preceding claims characterized in that the composition is presented in the form of a skincare, treatment, makeup or makeup remover for the skin, mucosas or keratin fibers.

17. Composition according to one of the preceding claims characterized in that it contains in addition an ingredient chosen from sunscreens, essential oils, vitamins, antiseborrheic agents, marine extracts, emollients, antioxidants, hydrophilic thickeners, preservatives, fragrances, coloring materials and their mixtures.

18. Composition according to one of the preceding claims characterized in that it forms a skincare or makeup base for the skin or lips.

19. Use of the composition in conformance with one of the preceding claims to smooth out imperfections in the relief of the skin and/or prolong the appearance over time of the composition and/or matting of the skin.

20. Use in a composition containing at least one liquid fatty phase and one solid phase representing at least 10% of the total weight of the fatty phase and containing organic spherical particles with a particle diameter less than 10  $\mu\text{m}$ , particles of at least one partially or totally



crosslinked elastomeric organopolysiloxane combined with said fatty phase to stabilize and/or make said composition homogeneous.

21. Use according to Claim 20 characterized in that the organopolysiloxane is obtained by the addition and crosslinking reaction in the presence of a platinum-type catalyst:

- (a) of at least one organopolysiloxane with at least two lower alkenyl groups per molecule; and
- (b) of at least one organopolysiloxane with at least two hydrogen atoms bonded to a silicon atom per molecule.

22. Composition according to Claim 20 or 21 characterized in that the organopolysiloxane is chosen from:

- i) organopolysiloxanes containing  $R_2SiO$  and  $RSiO_{1.5}$  units and possibly  $R_3SiO_{0.5}$  units and/or  $SiO_2$  in which independently of each other the R radicals represent hydrogens, alkyls such as methyl, ethyl or propyl, aryls such as phenyl or tolyl, unsaturated aliphatic groups such as vinyl, the weight ratio of the  $R_2SiO$  units to the  $RSiO_{1.5}$  ranging from 1/1 to 30/1;
- ii) organopolysiloxanes that are insoluble in and can swell in a silicone oil, obtained by the addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) with unsaturated aliphatic groups such that the amount of hydrogen or unsaturated aliphatic groups in (1) and (2) respectively is between 1 mol% and 20 mol% when the organopolysiloxane is acyclic and between 1 mol% and 50 mol% when the organopolysiloxane is cyclic.

23. Use according to one of Claims 20 to 22 characterized in that the ratio by weight of the spherical particles and the elastomeric organopolysiloxane is chosen in the range of 0.25 to 1.

24. Use according to one of Claims 20 to 23 characterized in that the ratio by weight of the spherical particles and the elastomeric organopolysiloxane is chosen in the range of 0.4 to 0.7.

25. Use according to one of Claims 20 to 24 characterized in that the liquid fatty phase contains at least one silicone oil and/or at least one hydrocarbon oil.

26. Use according to one of Claims 20 to 25 characterized in that the composition forms a skincare base or a makeup base for the skin or lips.

27. Procedure for the stabilization and/or homogenization of a composition containing at least one liquid fatty phase and one solid phase representing at least 10% of the total weight of the fatty phase and containing organic spherical particles with a particle diameter less than 10  $\mu m$ , consisting of combining particles of at least one partially or totally crosslinked elastomeric organopolysiloxane with said fatty phase.

28. Procedure according to Claim 27 characterized in that the organopolysiloxane is chosen from:

- i) organopolysiloxanes containing  $R_2SiO$  and  $RSiO_{1.5}$  units and possibly  $R_3SiO_{0.5}$  units and/or  $SiO_2$  in which independently of each other the R radicals represent hydrogens, alkyls such

as methyl, ethyl or propyl, aryls such as phenyl or tolyl, unsaturated aliphatic groups such as vinyl, the weight ratio of the  $R_2SiO$  units to the  $RSiO_{1.5}$  ranging from 1/1 to 30/1;

- ii) organopolysiloxanes that are insoluble in and can swell in a silicone oil, obtained by the addition of an organohydrogenopolysiloxane (1) and an organopolysiloxane (2) with unsaturated aliphatic groups such that the amount of hydrogen or unsaturated aliphatic groups in (1) and (2) respectively is between 1 mol% and 20 mol% when the organopolysiloxane is acyclic and between 1 mol% and 50 mol% when the organopolysiloxane is cyclic.

29. Procedure according to Claim 27 or 28 characterized in that the weight ratio of the spherical particles and particles of elastomeric organopolysiloxane is chosen in the range of 0.25 to 1.

30. Procedure according to Claims 27 to 29 characterized in that the weight ratio of the spherical particles and the elastomeric organopolysiloxane is chosen in the range of 0.4 to 0.7.

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## EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl <sup>6</sup> )
X	US 4 983 377 A (C. MURPHY ET AL.) January 8, 1991 * the entire document *	1-29	A61K7/48
P,X	EP 0 834 305 A (SHISEIDO CO., LTD) April 8, 1998 * Claim 1; Example 2-6 *	1	
X	WO 94 17774 A (THE PROCTER & GAMBLE CO.) August 18, 1994 * Claim 1; Examples 8 *	1	
X	WO 97 32560 A (THE PROCTER & GAMBLE CO.) September 12, 1997 * Claim 1; Examples 2, 3, 5 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl. <sup>6</sup> ) A61K
P,X	EP 0 829 253 A (SHIN-ETSU CHEM. CO.) March 18, 1998 * the entire document *	1	
The present search report has been drawn up for all claims.			
Place of search The Hague		Date of completion of the search January 4, 1999	Examiner Glikman, J-F
<b>CATEGORY OF CITED DOCUMENTS</b> X: Particularly relevant if taken alone. Y: Particularly relevant if combined with another document of the same category. A: Technological background. O: Non-written disclosure. P: Intermediate document. T: Theory or principle underlying the invention. E: Earlier patent document, but published on, or after the filing date. D: Document cited in the application. L: Document cited for other reasons. &: Member of the same patent family, corresponding document.			

## EP 0 908 175 A1

APPENDIX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN  
PATENT APPLICATION NO.

EP 98 40 2314

In this appendix, the patent family members of patent documents listed in the above-referenced European Search Report are indicated.

The data on the family members correspond to the state of the files of the European Patent Office on  
These data serve only for information and are given without guarantee

04-01-1999

Patent document listed in the search report	Date of publication	Member(s) of the patent family	Date of publication
US 4983377 A	January 8, 1991	AU 618168 B AU 4899790 A CA 2003392 A DE 68915171 D DE 68915171 T EP 0431218 A ES 2052029 T JP 3145413 A MX 172840 B PT 92370 A	December 12, 1991 May 9, 1991 April 30, 1991 June 6, 1994 October 6, 1994 June 12, 1991 July 1, 1994 June 20, 1991 January 17, 1994 July 5, 1991
EP 834305 A	April 8, 1998	JP 10158121 A	June 16, 1998
WO 9417774 A	August 18, 1994	CA 2155765 A CN 1118986 A EP 0793475 A JP 8506583 T US 5674509 A	August 18, 1994 March 20, 1996 September 10, 1997 July 16, 1996 October 7, 1997
WO 9732560 A	September 12, 1997	AU 2130197 A EP 0884996 A	September 22, 1997 December 23, 1998
EP 829253 A	March 18, 1998	JP 10139624 A	May 26, 1998

For additional details regarding this Appendix: see Official Journal of the European Patent Office No. 12/82